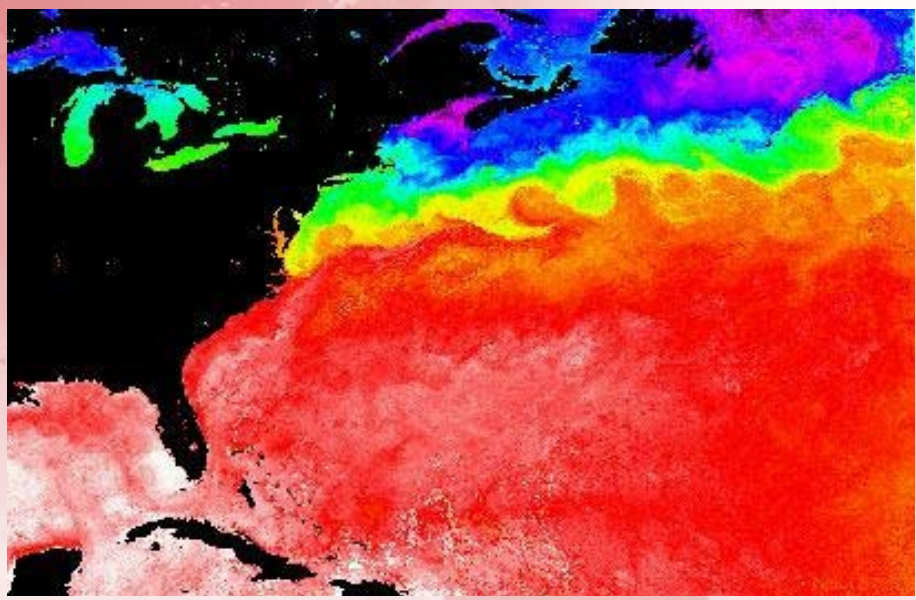
GHRSST

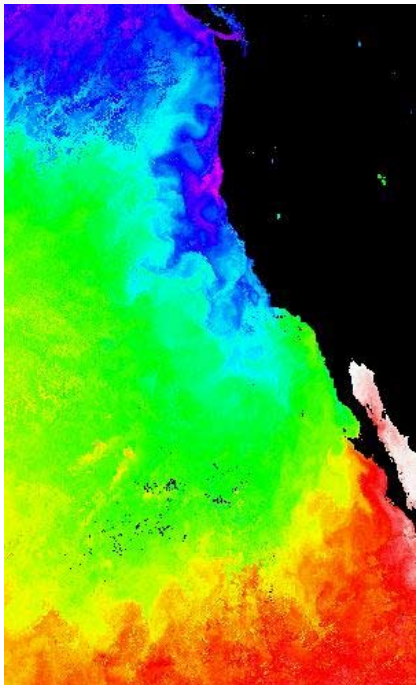


OVERVIEW

The aim of the Group for High Resolution Sea Surface Temperature (GHRSST) is to develop a new generation of climate quality sea surface temperatures (SST) in near real time for use operationally in numerical weather forecasting and ocean modeling, and in climate and oceanographic research. NASA's Global Data Assembly Center (GDAC) is the central clearinghouse for all data products, while NOAA's Long Term Stewardship and Reanalysis facility has the primary responsibility for long term archival and reanalyzed products.

SST is derived from multiple sensors including the Moderate Resolution Infrared Spetroradiometer (MODIS) on board the NASA Aqua and Terra platforms, the Advanced High Resolution Radiometer (AVHRR), the Advanced Microwave Scanning Radiometer (AMSR-E) EOS, the European Advanced Along-Track Scanning Radiometer (AATSR) on ENVISAT, the European Spinning Enhanced Visible and Infrared Imager (SEVIRI) on board the European geostationary MSG satellite and NOAAs Geostationary Operational Environmental Satellite (GOES). The GHRSST data sets, which are based on well-validated and published algorithms, provide several advantages over previous satellite SST products.

GHRSST data sets are being used in many applications, including climate prediction and short term weather forecasts. A collaborative project that includes NASA's Short-term Prediction Research and Transition Center (SPoRT) seeks to use GHRSST data in short term weather prediction, improving forecasts for severe storms, including hurricanes. A joint project between NASA and NOAA's Coastwatch is integrating GHRSST products into a NOAA near real time application. These products can then be used in decision support tools for better management of coastal resources.



FACTS

- Each SST pixel has a set of single sensor error statistics (SSES) that represent the best estimate of the bias and RMS error in the satellite measurement. These estimates are derived via comparisons with in situ data (SST from buoys, radiometers, ships) and dependence on other physical factors such as season, latitude, satellite zenith angle etc.
- GHRSST data sets are available in a standard netCDF Level 2 Preprocessed (L2P) format with CF compliant metadata.
- GHRSST L2P data also contain ancillary fields such as aerosol optical depth, wind speed, and solar irradiance that can be used to flag SST fields.